MULTIMEDIA UNIVERSITY

STUDENT IDENTIFICATION NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

T1, 2019/ 2020

BBI7084 – BUSINESS DATA ANALYTICS FOR MANAGERS

(All Sections/ Groups)

2 OCTOBER 2019
9.00 a.m – 12.00 p.m
(3 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consist of **FOUR (4)** pages (including the cover page).

2. Answer **ALL** questions. The marks distributions are given in parentheses.

3. Write all your answers in the **Answer Booklet** provided.

Question 1 (25 Marks)

a) Data mining methods can be broadly classified as supervised and unsupervised. Briefly explain the difference between these two approaches.

(3 Marks)

b) For each of the following problem scenarios, decide if a solution would best be addressed with supervised learning or unsupervised clustering. If you decide that supervised learning or unsupervised clustering is the best answer, list several input attributes you believe to be relevant for solving the problem.

(11 x 2 = 22 Marks)

1) What characteristics differentiate people who have had back surgery and have returned to work from those who have had back surgery and have not returned to their jobs?

2) When customers visit my Web Site, what products are they most likely to buy together?

3) Develop a general profile for credit card customers who take advantage of promotions offered with their credit card billing.

4) Differentiate individuals who are poor credit risks from those who are likely to make their loan payments on time.

5) Forecast which telephone subscribers are likely to change providers during the next three months.

6) Predicting the price of a stock three months into the future

7) Identifying whether or not certain financial or personal behavior indicates a possible terrorist threat

8) Finding out which items in a supermarket are purchased together and which items are never purchased together.

9) Target marketing of a niche product for small-capitalization business that does not have a large marketing budget.

10) Determine how telecommunication services can be packaged together to maximize revenue.

11) Identify customers who would likely want other services like such as money market accounts, investment services and car loans.

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Question 2 (25 Marks)

A company has decided to increase its product price and would like to predict how many customers might be lost for a particular percentage increase in product price. How do you apply CRISP-DM process for this problem and explain activities carried on all 6 steps in detail?

a) Business understanding (4 Marks)

b) Data understanding (4 Marks)

c) Data preparation (5 Marks)

d) Modelling (4 Marks)

e) Evaluation (4 Marks)

f) Deployment (4 Marks)

Question 3 (25 Marks)

A company wants to launch an advertising campaign for a product. Among its present customers the company wants to post product information to those with a high probability of purchasing the product. The company has data describing the past customer behaviour and personal data about each of its customers. There are also customers who have already bought the product, e.g. in a trial period. The customers of the trial period are divided into two classes: those who have bought the product and those who have not.

You have been hired as a Data Mining consultant to help the company to identify the potential customers by predicting the probability of purchasing the product.

a) Which data mining method you would apply for this problem? Justify
(10 Marks)

b) Briefly explain the steps involved in this data mining process.
(9 Marks)

c) What data mining techniques you would apply to solve this problem? Explain briefly minimum three of the chosen data mining techniques.
(6 Marks)

Continued...

Question 4 (5 x 5 = 25 Marks)

a) How does Amazon.com use predictive analytics to respond to product searches by the customer?

b) Describe the role of unsupervised cluster analysis in solving business problems with 2 examples.

c) What is search engine optimization (SEO) and why is it important for organizations that own Web sites?

d) Why are the users' page views and time spent on your Web site important metrics?

e) What are the three categories of social media analytics technologies and what do they do?

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